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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,435	03/31/2004	Gary Y. Tsao	P19002	9231

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03/10/2006

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EXAMINER

RAY, GOPAL C

ART UNIT

PAPER NUMBER

2111

DATE MAILED: 03/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/816,435	Applicant(s) TSAO ET AL.	
	Examiner Gopal C. Ray	Art Unit 2111	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,7,8,10,11,14,16,17,19,20,23,25 and 26 is/are rejected.
- 7) ☒ Claim(s) 3,4,6,9,12,13,15,18,21,22,24 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/3/06</u> . | 6) <input type="checkbox"/> Other: _____ |

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1. Claims 1- 27 are presented for examination.
2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The examiner believes that the title of the invention is broad. A descriptive title indicative of the invention will help in proper indexing, classifying, searching, etc. See MPEP 606.01. However, the title of the invention should be limited to 500 characters.
3. The drawings filed on 3/31/04 are acceptable by the examiner for examination purposes. However, the Office of Initial Patent Examination (OIPE) reviews drawings initially for publication purposes. Direct any inquiries concerning drawing review for publication purposes to the Office of Initial Patent Examination (OIPE). See MPEP 507 for detail information.
4. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. Furthermore, all claims should be revised carefully to eliminate all grammatical errors and antecedent basis problems.
5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
6. Claims 1, 5, 7, 8, 10, 14, 16, 17, 19, 23, 25 and 26 are rejected under 35 U.S.C. § 102(b) as being anticipate by US Patent 5,557,744 granted to Kobayakawa et al.

As per claim 1, the reference of Kobayakawa et al. teaches “determining that an event has occurred and determining a processor identifier” in Fig. 2, element 1; signal

"INTERRUPT REQUEST" and col. 4, lines 15-18; "determining an event data structure identifier for an event data structure into which data for the event is stored using the processor identifier" in Fig. 2, element 11 and col. 4, lines 30-31; "determining a vector identifier for an interrupt message vector to generate an interrupt" in col. 4, line 64 – col. 5, line 1.

As per claim 5, the reference of Kobayakawa et al. teaches "wherein the event data structure identifier is determined by accessing a processor redirection/indirection structure using the processor identifier" in col. 5, lines 35-50.

As per claim 7 the reference of Kobayakawa et al. teaches "writing an event entry to the event data structure identified by the event data structure identifier; and advancing a write indicator" in col. 5, lines 6-11.

As per claim 8, the reference of Kobayakawa et al. teaches the added limitation of the claim in col. 4, lines 19-29.

As per claim 10, the claim recites an apparatus. However, the limitations of the claim are parallel to the limitations of method claim 1. Therefore, in teaching the construction and use of the device, US Patent 5,557,744 granted to Kobayakawa et al. teaches a corresponding apparatus.

As per claims 14, 16 and 17, the added limitations of the claims are rejected for the same reasons as discussed in the rejection of claims 5, 7 and 8 respectively.

As per claim 19, the claim recites an article of manufacture for interrupt processing. However, the limitations of the claim are same as the limitations of claim 10. Therefore, the rejection of claim 10 above is also applicable here.

As per claims 23, 25 and 26, the added limitations of the claims are rejected for the same reasons as discussed in the rejection of claims 5, 7 and 8 respectively.

7. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2, 11 and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over by US Patent 5,557,744 granted to Kobayakawa et al. in view of by US Patent 6,792,483 granted to Schmidt.

As per claim 2, the claim is rejected for the same reasons as discussed in the rejection of claim 1 with the exception of the added limitation, "wherein the processor identifier is determined by applying a hash technique". However, the above feature was well known to one of ordinary skill in the data processing art at the time the invention was made as evidenced by Schmidt. The reference of Schmidt teaches "hash technique" in Fig. 3. It would have been obvious to one of ordinary skill in the data processing art at the time the invention was made to modify the system of to Kobayakawa et al. to use the "hash technique" of Schmidt to obtain the claimed invention because both the prior art systems are analogous to processing interrupts and the use of "hash technique" is merely a known possibility which one of ordinary skill in the data processing art at the time of the invention would select in accordance with circumstances without the exercise of inventive skill so as to allow the system to take

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advantage of the many benefits provided by the "hash technique" such as unambiguously identifying each item stored as an array of record in a lookup table.

As per claims 11 and 20, the added limitations of the claims are same as the limitations of claim 2. Therefore, the rejection of claim 2 above is also applicable to those claims.

9. Claims 3, 4, 6, 9, 12, 13, 15, 18, 21, 22, 24 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an Examiner's Statement of Reasons for Allowance:

The claimed invention is directed to "an interrupt scheme for an input/out device". Claims (3, 4, 6, 9); (12, 13, 15, 18) and (21, 22, 24 and 27) are sets of claims having the same limitations respectively. The examiner has done complete search and found no prior art of record, alone or in combination, teaches or fairly suggests the limitation, "wherein the event data structure identifier is determined by accessing a message vector mapping structure using the processor identifier and an event" in combination with other claimed elements as claimed in claims 3, 12 and 21. Similarly, each remaining subset of dependent claim recites at least an additional feature which the prior art of record, alone or in combination does not teach or fairly suggest.

Any comments considered necessary by applicant must be submitted in response to this office action to avoid processing delays. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is urged to consider the references. However, the references should be evaluated by what they suggest to one versed in the art, rather than by their specific disclosure.

The prior art submitted by applicant on 2/3/06 has been considered by the examiner and made of record in the file. If applicants are aware of any prior art better than those are of record, they are required to bring the prior art to the attention of the examiner. Applicants are also reminded that each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in 37 CFR § 1.56. Applicants are advised to submit any information material to patentability in accordance with 37 CFR § 1.97 and § 1.98.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gopal C. Ray whose telephone number is (571) 272-3631. The examiner can normally be reached on Monday - Friday from 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Cottingham, can be reached on (571) 272-7079. The fax phone number for this Group is (571) 273-8300.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [\[john.cottingham@uspto.gov\]](mailto:john.cottingham@uspto.gov).

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a

possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to TC central telephone number is (571) 272-2100. Moreover, information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lastly, paper copies of cited U.S. Patents and Patent Application Publications ceased to be mailed to applicants with office actions as of June 2004. Paper copies of Foreign Patents and Non-Patent Literature will continue to be included with office actions. These cited U.S. Patents and Patent Application Publications are available for download via Office's PAIR. As an alternate source, all U.S. Patents and Patent Application Publications are available on the USPTO web site (www.uspto.gov), from the office of Public Records and from commercial sources. Applicants are referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197 for information on this policy. Requests to restart a period for response due to a missing U.S. Patent or Patent Application Publications will not be granted.


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